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AUTHOR Gonzalez, Virginia
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ABSTRACT

This is a descriptive survey study on the academic and personal characteristics of inservice teachers who were taking a graduate course in multicultural education issues. Descriptions of existing patterns and changes in academic knowledge and attitudinal belief systems on multicultural education are summarized. Reflective teaching was used as a psychopedagogical strategy with the inservice teachers for the purpose of increasing their academic knowledge and changing their attitudes. Results suggest that higher levels of academic knowledge occur due to an increase in awareness levels of attitudinal belief systems gained through self-reflection. Teachers became more sensitive and aware of their influence on assuring educational success for culturally and linguistically diverse children. Some conclusions were: reflective teaching can be used as an effective ethnographic research tool, as well as an effective psychopedagogical strategy for multicultural education; the voices of these preservice and inservice teachers ask for teacher educational programs that focus on reflective and conceptual teaching models; and these teachers felt empowered by becoming reflective thinkers and "student-researchers" in their double role of inservice teachers and graduate students. (Contains 22 references.) (Author/LL)

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Using Reflective Teaching for Changing In-Service Teachers' Attitudes and Increasing Their Cognitive-Ethical Development and Academic Knowledge in Multicultural Education

Virginia Gonzalez, Ph. D.
Assistant Professor
Department of Educational Psychology
The University of Arizona

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Abstract

This is a descriptive survey study on the academic and personal characteristics of in-service teachers taking a graduate course in multicultural education issues. Descriptions of existing patterns and changes in academic knowledge and attitudinal belief systems on multicultural education are summarized. Reflective teaching was used as a psychopedagogical strategy with in-service teachers for the purpose of increasing their academic knowledge and changing their attitudes. Results suggest that higher levels of academic knowledge occur due to an increase in awareness levels of attitudinal belief systems gained through self-reflection. Teachers became more sensitive and aware of their influence on assuring educational success for culturally and linguistically diverse children. In conclusion, reflective teaching can be used as an effective ethnographic research tool, as well as an effective psychopedagogical strategy for multicultural education. The voice of these pre-and-in -service teachers claims for teacher educational programs that focus on reflective and conceptual teaching models. These teachers felt empowered by becoming reflective thinkers and "student-researchers" in their double role of in-service teachers and graduate students.

Using Reflective Teaching for Changing In-Service Teachers' Attitudes and Increasing Their Cognitive-Ethical Development and Academic Knowledge in Multicultural Education

Presently, there is need to develop new multicultural teacher education models for meeting the idyosincratic needs of special, culturally and linguistically diverse, and mainstream students. I propose that this model must be based on reflective teaching as a pychopedagogical technique for teacher education. Through reflection teachers can gain awareness of their own attitudes and belief systems as lenses through which new conceptual and applied knowledge can be acquired, and teachers' intrinsic potentials can be actualized. Thus, models of reflective thinking encompass educationally applied techniques and strategies and their underlying conceptual basis in order to train teachers in multicultural education. It is my belief that teachers are professional educators, and as such, they need to understand conceptually instructional models with their concrete expressions in instructional strategies and techniques. However, conceptual and applied knowledge in multicultural education can only be constructed by teachers if they are aware of their educational philosophies, attitudes, and belief systems; and therefore a cognitive dissonance needs to be created by the educational method for stimulating teachers to become reflective thinkers. If the academic content does not match the students' attitudinal belief systems; then in order for the learner to construct new knowledge an attitudinal change has to take place.

In order to stimulate teachers to think, react, discuss, and discover their own positions, and ultimately the emergence of cognitive dissonance or disequilibrium and attitudinal change; different psychopedagogical strategies within the philosophy of reflective teaching were used. The reflective teaching strategies used were: exposure to other teachers' belief systems, writing about their educational philosophies, reacting to controversial issues in multicultural education, class discussions as open forums for exchanging and brainstorming ideas and opinions, class readings, presenting contradictory philosophical and theoretical positions on controversial issues, etc. Teachers were stimulated to transform the conceptual content of lectures, readings, and their clasmates' reports with the purpose of discovering their own opinions, perspectives, beliefs, values, principles, and applied approaches for controversial multicultural education issues. Different tasks that also served as qualitative instruments were used: survey of personal and educational history, survey of prior and exit level of academic knowledge, survey of educational attitudes, written and oral presentations of their

educational philosophies, and reactions to multicultural education issues. Different theoretical and applied issues in multicultural education were included as class contents, such as the influence of bilingualism on intelligence, theories of first and second language learning, tracking, gender and socioeconomic factors, assessment and instructional methods for culturally and linguistically diverse children, overrepresentation of minority groups in special education, etc. Another purpose of the inclusion of different psychoeducational strategies was also to give different opportunities and ample developmental time to make explicit their preexisting implicit personal beliefs, to challenge the adequacy of these beliefs, and to give them extended opportunities to integrate and transform their knowledge through assimilation and accommodation processes. Thus, teachers had the opportunity to gain awareness of their own and their classmates' current knowledge levels, educational beliefs, and background experiences about multicultural education. It was anticipated that the analysis of this information by a group of volunteer "student-researchers", and then the release of this information by them to their classmates had potential for stimulating individual reflection on students about their attitudinal belief systems.

Thus, this study has scientific as well as educational importance, due to the present need for developing educational models that meet the demographic changes in the school population. The number of minority children is increasing rapidly throughout the nation, as well as the changes in the traditional mainstream family is being reflected in children of divorce or single-parent households, dual career families, poverty, violence and parental abuse, drugs, etc. At the same time, the international situation is changing rapidly, pointing to the need for moving from an eurocentric to a multicultural curriculum, and setting higher academic standards. These domestic and international changes are leading toward multicultural education as a school reform movement that meets the diverse new educational needs of our school population in cognitive, emotional, and sociocultural domains.

Objectives

This study has the purpose of describing teachers's existing patterns and changes in attitudinal belief systems and gains in academic knowledge on multicultural education. Changes may occur as a result of using reflective teaching with in-service teachers attending a graduate level course in multicultural education. Thus, the purpose of this study can be divided in two objectives: (a) to explore and describe patterns of teachers' background experiences, academic knowledge levels, educational beliefs, and cognitive and ethical developmental levels; and (b) to document the effectiveness of reflective

teaching as a psychoeducational strategy for changing teachers' attitudinal belief systems, and increasing academic knowledge levels. A description of in-service teachers cognitive and ethical developmental levels, educational beliefs, and background experiences in relation to multicultural education is not currently available. Then, the description of the relationship among these factors can reveal new interactions that can be used for developing new research questions. It was anticipated that reflective teaching had the potential to be a psychopedagogical strategy for creating cognitive dissonance in the learner, and thus to stimulate attitudinal changes and the construction of new knowledge.

Theoretical Framework

Multicultural education courses deal with complex interdisciplinary concepts, controversial issues, self-awareness, and positive attitude development (Bennett, Niggle, & Stage, 1990). Due to the complexity of the content of multicultural education courses the traditional delivery of academic information is not effective for making a real impact on teachers' attitudes and gain in academic knowledge. It is well known in the literatture (Bradley-Stonewater, Stonewater, & Hadley, 1986; Bennett, et al. , 1990; Erwin, 1983; Perry, 1970) that the instructor' s understanding and knowledge of the cognitive-academic, and ethical developmental level of students improves the quality of education that graduate and undergraduate students receive. Then, multicultural teacher education programs will be more effective if they meet teachers' cognitive and ethical developmental characteristics.

In addition to the complexity of the content of multicultural education, there are also methodological problems associated with the development of new teacher education models. Several of these methodological problems are related to the operationalization and measure of teachers' epistemological beliefs and attitudes. The first problem is related to the lack of common labels used for the concept of teachers' beliefs (e. g. , personal epistemologies, educational philosophies), terminology that in some cases denotes different meanings as well (e. g. , practical knowledge, principles for practice). In general, there are two broad conceptualizations of teachers' beliefs: (a) existential epistemologists consider that teachers choose theoretical and applied approaches, resulting in value judgements, based on their own personal and professional experiences within a specific sociocultural context; and (b) objective epistemologists consider that educational knowledge is independent of sociocultural practices, and as such can exist as a "real entity" independent of the learner's subjectivity. In the theoretical framework of this study, it is considered that teachers' sociocultural personal and professional

experiences do influence their attitudes, beliefs, and teaching practices. Thus, an existential epistemological position is taken in this paper.

Secondly, teachers' beliefs are very difficult to measure due to their subjective and inferential nature. Thus, researchers have to use indirect measures through teachers' verbal reports, or through observing overt teaching behaviors in the classroom and then making inferences for explaining the meaning of these behaviors. I propose that the measurement of teachers' beliefs through verbal oral or written expressions can be used as an instrument for data collection, as well as a tool for constructing new knowledge and stimulating change in attitudinal beliefs. Using writing increases awareness levels of attitudinal beliefs because the semantic function of language leads the learner to gain accessibility to implicit knowledge. This semantic function of language has been called in cognitive psychology "metalinguistic awareness", term that refers to the use of language as an abstract logic tool for reflecting upon thinking processes. Karmiloff-Smith (1986) refers to the function of metalinguistic awareness as the progressive restructuring of underlying processes of knowledge that change from an implicit to an explicit form. Thus, for the learner been able to verbalize her thoughts means an opportunity to access consciously different levels of progressive representational changes from implicit or tacit to explicit or procedural forms of knowledge. Language gives the possibility of gaining awareness of our internal cognitive processes, such as our own belief systems, values, attitudes, and educational philosophies. Karmiloff-Smith (1986) also pointed out that the same learner could be at different levels of representational change for different knowledge content domains. In relation to teachers' attitudes, Kagan (1992) reported that teachers' beliefs may vary according to the domain of the instructional content, or in relation to the type of instructional programs and materials used. It is proposed in this study that teachers' level of academic knowledge and attitudinal awareness may vary across content domains, due to different sociocultural personal and professional experiences that each teacher can access consciously in order to make explicit their implicit knowledge.

This second methodological problem of how to measure teachers' beliefs has been pointed out by different researchers. For instance, Erwin (1983) stated the need to develop reliable and valid instruments that measure higher education students' conceptual knowledge, which could be probably based on Perry's scheme (1970) of cognitive-ethical development. Perry's scheme (1970) explains how college students describe and understand or construct meanings of their worlds. The model is hierarchical and structural, that is lower levels of cognitive-ethical development are the basis for developing new and higher levels. This model is also based on the concept of

disequilibrium as a motivation or drive that guides the individual to move into a higher developmental level. These two characteristics, structuralism and disequilibrium, make the conceptual underlying basis of Perry's (1970) scheme very similar to Piaget' s (1965) theory of cognitive development. This scheme presents four stages of intellectual and ethical development in college students, corresponding to nine positions, which describe how people understand or make meaning of their world. The first stage is dualism, in which individuals tend to see issues in clear-cut, simplistic terms and look to authorities for the answers. The second stage is called multiplicity, individuals in this stage recognize alternative perspectives given by other authorities, which influence their own perspectives. However, they are still afraid of assuming a moral position and of making decisions and accepting consequences. The third stage is called relativism, in which individuals are able to make decisions, and accept the resulting responsibilities and consequences. At the third stage, individuals are able to take their own position, and they can tolerate other contradictory viewpoints. The fourth and last stage is called commitment and empathy, at this fourth stage individuals have already made major decisions and they have gain awareness of their impact on other people. These individuals have developed sensitivity and responsibility about other people and society in general. Erwin (1983) found that freshmen students who were in the dualistic stage lack self-confidence, and also were not aware of their feelings of lack of committment and confortableness with their physical and phychological self. In contrast, students who were committed had a greater self-confidence level, were more mature, participated more in community groups assuming positions of responsibility, and had a greater awareness of their feelings about their physical and phychological self.

Presently, only few teacher education models have been developed for multicultural education courses. Bennett, et al. (1990) conducted a study that examined the effect of a multicultural education course on pre-service teachers' cognitive development, feelings of social distance, and multicultural knowledge. The conceptual model of the multicultural teacher education course that Bennett et al. (1990) developed is based on four interactive goals: (a) development of historical perspectives and cultural consciousness; (b) development of intercultural competence; (c) eradication of racism, prejudice, and discrimination; and (d) successful teaching of multicultural students. Results of the study suggested that there is a relationship between students' cognitive development, multicultural knowledge, and feelings of social distance as measured by the pre-post-tests. These results indicated that the model for multicultural teacher education that Bennett et al. (1990) used was effective for reducing the social distance, and

enhancing their cognitive development and academic knowledge of all students; regardless of their cognitive developmental level.

Mercado and Oest (1992) reported an exploratory study that demonstrated a change of attitudes, and gain of insights and academic knowledge by the instructor and students through the use of self-reflection on multicultural education issues. Mercado taught a reading seminar for bilingual education using the same assessment and instructional methods (i. e. , portfolios, reciprocal teaching, thematic units, and bilingual children as "students-and-researchers") and philosophies (i. e. , reflective teaching) that have proven to be effective for linguistically and culturally diverse children. Mercado, as the course instructor, created a student-centered environment that offered them a zone of proximal development (Vygotsky, 1978). Students were challenged to create a community of learners that will support one another. Some students resisted the responsibility that this new model for teacher education gives them, as it was in contradiction to traditional hierarchical relations of power between instructors and students in higher education contexts. The instructor and the students shared the responsibility of offering constructive criticism, proving, thinking, reacting to, and reflecting about the educational value of the instructional methodologies studied conceptually and experienced directly in the seminar. Students gained insight about values, attitudes, beliefs, and concepts that were underlying the instructor's educational strategies and overt behaviors. The instructor served as a role model for "teaching how to teach", which can be considered a metacognitive strategy for teacher education. Students change their personal and educational values and attitudes, and were stimulated to achieve higher levels of learning and critical thinking.

In sum, the need for the development of new models for teacher education in multicultural issues is related to the complexity of the instructional content, as well as to the methodological problems for studying the psychological constructs related to attitudinal belief systems. Multicultural education encompasses issues beyond "objective" academic content; which include the learners' personality processes, such as self-awareness of belief systems, and positive attitude development. Thus, it is proposed in this paper that a psychopedagogical strategy, such as reflective teaching, is an adequate tool for stimulating self-awareness and attitudinal change which will allow for the construction of new knowledge in multicultural education issues.

Method

Subjects

Students of a graduate level multicultural education class were invited to participate in the study as subjects and/or "student-researchers". Volunteer "student-researchers" helped with data categorization using a qualitative cognitive-ethical development model (Perry, 1970), and content categories derived from the data collected.

The age range of the 55 students who agreed to participate in his study varied from 20 to 55 years. In the youngest age group (20-25) there were 9 students (15.3%), in the second age group (26-30) there were 17 students (28.8%), in the third age agroup (31-35) there were 9 students (15.3%), in the fourth age group (36-40) there were 7 students (11.9%), in the fifth age group (41-45) there were 12 students (20.3%), and in the oldest age group (50-55) there was only 1 student (1.6%). The majority (55.9%) were in-service teachers and part-time female students who were between 26 and 40 years of age. Regarding ethnicity, the majority of students (81.8%, n=45) reported a White ethnicity; only a small proportion of students identified with a minority ethnic background: Hispanic (7.3%, n=4), African-American (5.5%, n=3), and Asian-American (5.5%, n=3).

Instruments

Three surveys with open-questions were designed for gathering information regarding: (a) background personal education (14 areas, with a total of 51 questions), (b) prior/exit level of academic knowledge about multicultural education (6 areas, with a total of 21 questions), and (c) teachers' educational beliefs (6 questions). In addition, students were asked to write a philosophical belief paper and a reaction paper. The course included a variety of activities (i. e. , interview to a student, parent, or educational personnel related to multicultural education; an issue paper; their participation as student-researchers; and class presentations of survey findings). Different formats were also used for course presentations: lectures, discussions, activities, case studies, students' presentations; and invited speakers who presented their perspectives and their research on a variety of multicultural education topics, and/or were themselves members of a minority and special education group.

Procedure

Students were invited to participate in this study on a voluntary basis as subjects and/or "student-researchers", and to sign a consent form if they decided to release the information gathered for a research study. After the data collection had been completed, the information was analyzed qualitatively in three major steps of data translation: (a) initial tabulation and coding; (b) separate analysis of individual and groups of questions; and (c) synthesis, interpretation, and discussion of results.

Results and Discussion

Background personal education information survey. This survey included four major areas: (a) gender factors influencing education, (b) effect of race and ethnicity of students and their parents on education, (c) students' social contact with peers and teachers of other ethnic groups, and (d) Socio Economic Status (SES) and educational level of the students and their parents. These four major areas and their interactions were explored. In addition, data was used as a direct experience for illustrating conceptual topics covered in the course.

Regarding the effect of gender on schooling and career choice, the majority of female students in the age group from 20 to 30 years of age (n=16, 70%) felt that : (a) there was no difference in treatment in their education due to gender, (b) they were encouraged to continue a higher education career, (c) they were given more freedom to choose a college curriculum, and (d) their teachers instilled in them the belief that they were superior students compared to their male classmates. However, some students (n=7, 30%) in this younger age group reported that they were encouraged to take traditional female courses. All female students in the age group between 31 and 40 years of age reported that: (a) they had been treated differently due to their gender; (b) teachers had lower expectations for females, and gave them less attention and encouragement in class than to their male classmates; and (c) they were encouraged by their teachers to take traditional female courses and careers. The majority of women in the age groups over 41 years of age reported that they were encouraged to take traditional female courses (n=9, 75%), only some (n=3, 25%) reported that their teachers led them into regular college curriculum. Thus, across all age groups the majority of women were encouraged to pursue traditional careers (i. e., teachers, nurses, secretaries). However, female students in the younger age group reported a change in the educational treatment received from their teachers in relation to their gender.

In contrast, the majority of males of all age groups were encouraged to pursue careers in business and sciences were potential incomes and social status were higher. All males across all age groups reported that teachers had higher expectations and gave them more attention and encouragement in class than to their female classmates. All males (n=3, 100%) in the age group from 20 to 30 years of age were encouraged by their teachers to pursue careers in business and science only . Male students in the age group between 31 and 40 years of age were encouraged either to pursue careers in business and science (n=3, 60%), or to get involved in athletics (n-=2, 40%). There was only one male student over 41 years of age, who also reported that he was encouraged to pursue business and science careers (n=1, 100%). Thus, all males across age groups reported that teachers had higher expectations for them and gave them more attention and encouragement in class than to their female classmates.

Regarding the effect of students' race and ethnicity on education, it is interesting to note that there were commonalities across ethnic groups in the subjective color terms used for qualifying their race (e. g. , "non-tan" and "brown" was used by subjects who self-categorized as coming from White and African-American ethnic backgrounds; "olive" was used by subjects who self-categorized as coming from White and Hispanic ethnic backgrounds). This information was given by students at the beginning of the semester, and as the data in the prior knowledge survey showed; students did not have a clear understanding of the conceptual differences between race, ethnicity, and culture.

In regard to the effect of their ethnicity on education, the majority of White students (n=23, 51%) reported that there was no effect, and a large proportion of White students (n=19, 43%) reported positive effects (i. e. , higher teacher expectations, college opportunities, better schooling). Only a small portion of the White students (n=3, 6%) reported negative effects due to their ethnicity (i. e . , limited access to financial aid, conflicts with minority teachers and students, be led to stereotypic White careers). The majority of Hispanic (n=3, 75%) and Asian-American (n=2, 66.6%) students, and all African-American (n=3, 100%) students reported negative effects of their ethnicity on their higher education opportunities, and on their relationship with teachers and peers. Reasons given were related to teachers' prejudice and discrimination because of their physical appearance and socioeconomic status, and not being encouraged by teachers to pursue higher education. Students from all ethnic groups reported limited contact with peers and teachers from other ethnic groups throughout elementary and secondary school, and higher education. This could be explained by socioeconomic factors affecting tracking in educational institutions at the elementary and secondary levels, and by the

small number of students from minority backgrounds at the higher education level who will become future professionals.

When students were asked about the effect of their ethnicity on their socioemotional reactions to educational treatment, the majority of White students (n= 28, 62%) reported no effect. A group of White students (n=11, 24,5%) reported negative effects (i. e. , unconfortable feelings, and to feel responsible for negative perceptions of Anglo supremacy), and some White students (n=6, 13.5%) reported positive effects (i. e. , feel fortunate to belong to the White supremacy group). All African-American students (n=3, 100%) reported negative effects (i. e. , minority sense of uneasiness, and discrimination and prejudice). The majority of Hispanic students (n=3, 75%) felt that negative effects existed (i. e. , awareness of different treatment based on ethnic groups, and teachers' assumption that they did speak Spanish). Only one Hispanic student (25%) reported no effect due to ethnicity. All Asian-American students (n=3, 100%) reported no effects of their ethnicity on socioemotional reactions to educational treatment.

When students were asked about the effect of the interrelationship of gender and ethnicity on their education, 40% of the White female students reported no effects, 30% of them reported negative effects (i. e., curriculum tracking, job opportunities, and career choices), and 30% of them reported positive effects (i. e. , race benefitted them more than gender). Half of the White males (50%) reported no effects, 25% of them reported negative effects (i. e. , labels and stereotypes for curriculum and career choices), and 25% of them reported positive effects (i. e. , better treatment). All African-American, Hispanic, and Asian-American female and male students reported negative effects, and they emphasized that ethnicity was the major factor rather than their gender.. In sum, when both gender and ethnicity were related, majority male students felt either enjoying positive effects of ethnic differences, or they were feeling guilty due to enjoying preferential educational treatment. In contrast, minority students felt that stereotypes and prejudices associated with race and ethnicity affected them more than being female or male. However, female minority and majority students emphasized more their limitations in career choices to traditional women's careers. Male minority students emphasized more the need to work harder in order to be successful.

The third area of the background survey referred to SES. The majority of students identified their parents' SES as middle class (40.3%), and upper-middle class (35.4%). Some students also identified their parents' SES as lower-middle class (16.1%), lower class (6.4%), and upper class (1.6%). The majority of students in the upper-middle class reported that their mothers had a college education, either incomplete (40.8%), or a Bachelors degree (27.2%), or a Masters degree (9%). The majority of fathers in the

upper-middle class group had a college degree: 22.7% Bachelors, 18.1% Masters, 9% a degree in medicine, and 4.5% a doctoral degree. In the middle class group, the majority of mothers (56%) and fathers (36%) had completed the 12th grade level. In this second group, fathers had attained more college degrees (Bachelors 16%, Masters 4%, and Doctoral degrees only 1%) than mothers (Bachelors 8%, and Masters 4%). In the lower class group, the majority of mothers (40%) and fathers (40%) had attained the 12th grade level. Only fathers in this group had gone beyond college level, with 10% of fathers with a Masters degree earned. Regarding occupation, half of the mothers in every SES group were housewifes, the other half of the mothers in every SES group had traditional women occupations (i. e. , teachers, nurses. secretaries, or clerical jobs). All fathers in the upper-middle class group occupied high status professional positions (i. e. , engineers, physicians, business men). The majority of the fathers in the middle class group occupied technical or managerial jobs. Fathers in the lower class group occupied laboring jobs (i. e. , carpentry, plumbing). Fathers in the lower class group had clerical or factory jobs. In relation to number of siblings, most students in the upper class, upper-middle class, and middle class had no more than 3 siblings, the majority of whom had finished high school and attended college. Students in the lower-middle and lower class had from 3 to 5 siblings, the majority of whom had finished high school, but only some had attended college.

In conclusion, different interrelated patterns were found: (a) the higher the SES, the higher the level of education attained by students and their parents, (b) students and their parents with a higher educational degree, job opportunities, and SES came from White ethnic groups, (c) gender and ethnicity was related to level of education attained, SES, and occupation, and (d) the number of siblings in each family was also related to SES. Thus, it can be concluded that an interrelation between SES, educational level attained, and job opportunities, gender, ethnicity, and number of siblings was found for students and their parents. The higher the SES, the higher the level of education attained by male students and their fathers; factors that were associated also with better job opportunities. Female students and their mothers tended to attain lower educational levels, even when they came for high SES backgrounds. An interaction between ethnicity, race, and SES was also found. Students coming from higher SES had access to good quality public schools and colleges, who mostly came from White ethnic backgrouns. However, some of the low and middle class students reported that eventhough their parents had to work hard to support them, their parents value education and encouraged them to pursue careers as a means to achieve a better life.

In general, it can be concluded that unequality of education existed for minority groups, in the form of prejudices and discrimination associated with their ethnicity, race, parental SES, level of education and occupation of their parents, and gender. Thus, there is a complex interaction among these multidimensional factors which will affect the quality of education received, especially at the elementary and secondary levels. In turn, this quality of education received and the years of schooling will increase or decrease the probabilities of being in a higher or lower SES given by their career choice opportunities.

Prior-exit level of academic knowledge survey. This survey included six major areas of questions including the most important topics covered in this multicultural education course. The first area of questions encompassed basic concepts; such as multicultural education, and the relationship between race, ethnicity, and culture. Students' understanding of multicultural education in the pre-test corresponded to three different concepts: the highest proportion (n= 21, 38.2%) of the students' definitions corresponded to an equal opportunity approach, followed by a large proportion (n=17, 30.9%) of the students' definitions corresponding to a philosophical approach (i. e. , understanding and awareness of cultural diversity among students and themselves), and a large proportion of students (n=15, 27.3%) considered multicultural education as a content approach (i. e. , teach history, geography, traditions, and values from different cultures). Only few students, (n=3, 2.6%) could not give a definition of multicultural education. Regarding the definition of multicultural education in the post-test, 25.5% of the students (n=14) indicated an equal opportunity approach, 40% of the students (n=22) indicated a philosophical approach, 14.5% of the students (n=8) indicated a content approach, 9.1% of the students (n=5) indicated a definition that combined content and equal opportunity approaches, and 10.9% of the students (n=6) indicated a combination between equal opportunity and philosophical approaches.

In order to provide a framework for understanding the variation of responses in the survey, it will be helpful to define the three different concepts of multicultural education pointed out by the students. According to Banks and Banks (1989), the equality of education movement corresponds to a social change in the schools and other education institutions. That is, students from all social classes, gender, racial and cultural groups can have equal access and opportunity to succeed academically in the public school system. Banks and Banks (1989) defined the content approach in multicultural education as an incorporation of information about different cultural and ethnic groups in an integrative and comprehensive manner. That is, exposing students to the values and beliefs of other cultures through concrete experiences. According to

Banks and Banks (1989), the philosophical approach is the most inclusive and complex movement in multicultural education, as it is based on changing educational programs and teachers' beliefs, attitudes, and values toward other racial, ethnic, and cultural groups. Thus, only by changing teachers' attitudinal belief systems a real gain in awareness and sensitivity levels will occur. This change of teachers' attitudes and gain of awareness will assure the avoidance of biases toward culturally and linguistically diverse children through a real consequent change in teachers' pedagogical styles reflected in the genuine adoption of philosophical approaches to multicultural education.

By comparing students' responses in the pre-test and the post-test, it can be concluded that there was an increase in the level of complexity of the students' conceptual understanding of multicultural education. Given that the most complex approach to multicultural education is the philosophical approach (Banks & Banks, 1989), the increase of responses in this category, and the inclusion of the interaction between approaches, indicates that students gained academic knowledge. In addition, there was also a decrease of the frequency of responses in the definition of multicultural education as a content approach. Thus, students' exposure to the complexity of the concept of multicultural education in relation to teachers' personal and professional attitudinal belief systems resulted in a significant gain in academic knowledge. The reason for this gain of academic knowledge can be attributed to the teachers' expanded view from a politically motivated declaration of equality of opportunities to a more complex personal meaning given by their attitudinal change. This change of attitudes was expressed by teachers' in their willingness to adapt their pedagogical styles for meeting the needs of culturally and linguistically diverse children.

Regarding the relationship between race, ethnicity, and culture, in the pre-test a large proportion of students (n=21, 38.2%), could not differentiate these three concepts; a large group of students (n=20, 36.3%) could differentiate these three concepts; some students (n=10, 18%) differentiated race from culture only; and few students (n=3, 5.7%) responded that their own perspectives on how they viewed the relationship between race, ethnicity, and culture influenced their views. Only one student (1.8%) said that there was no relationship between these three concepts. In contrast, in the post-test all the students could differentiate race, ethnicity, and culture. This shows a clear gain of knowledge as a result of stimulating students to reflect on their attitudes toward racial, ethnic, and cultural groups; in addition to exposure to academic information on these three concepts. Furthermore, students also showed more complex responses by pointing to specific differences between these three concepts: 56.4% of the students (n=31) pointed to an overlap between race, ethnicity, and culture; 10.9% of the students (n=6)

differentiated between race, ethnicity, and culture by giving definitions for specifying how the concepts differed; 37% of the students (n=20) differentiated between race and culture only; 14.5% of the students (n=8) differentiated between culture and ethnicity only; and 14.5% of the students (n=8) pointed out that ethnicity is a dependent subgroup of race.

Overall, when comparing students' responses in the pre-test and the post-test, it can be concluded that there was a gain in understanding the complexity of the specific definitions and relations of race, ethnicity, and culture. The pre-test showed a confusing pattern of multiple disconnected views of these three concepts and how they were interrelated. The post-test showed that the majority of students had trascended their original multiple disconnected view for a more connected interaction among the specific concepts and their interrelations. Responses suggest that the interrelation between race, ethnicity, and culture is a complex and holistic concept that teachers need to understand better, due to its educational implications. In general, the most difficult difference to make by the students was race from ethnicity. Ethnicity differs from race because an ethnic group can have an identification that goes beyond the limits of a particular race. In fact, an ethnic group can be formed by people who come from different and mixed racial backgrounds. The educational implications of this complex interrelationship refer to a philosophical approach to multicultural education; in which culture, ethnicity, and race convey beliefs, interests, traditions, values, and cultural concepts. These concepts need to be approached from an equal opportunity standing, so that teachers respect other cultures, and they do not impose their world view on the students. Moreover, these concepts need to be approached also from a philosophical view, and not a content view, in order to get teachers aware of how race, ethnicity, and culture are conceptually different.

The second area of questions encompassed SES and gender factors influencing education. Regarding the effect of SES on the quality of education, in the pre-test 80% (n=44) of the students indicated that the level of SES affected educational opportunities, but they did not know exactly how of what was the cause and effect. Within these 80% of responses, specific categories can be enumerated: 26.3% (n=13) of students indicated that SES influences educational opportunities, 23.6% (n=13) indicated that lower SES leads to fewer opportunities, 28% (n=15) responded that higher SES leads to more opportunities, and 4.8% (n=2) indicated that high academics equalizes opportunities for low SES students. In the post-test, students' responses in relation to the effect of SES on education indicated a gain in awareness of the specific SES factors that may cause access to fewer or more educational opportunities. There was an increase in the number of students who stated that SES affects educational oppportunities (36.4%,

n=20), in relation to considering that lower SES tends to give fewer educational opportunities (34.5%, n=19). The number of students' responses in relation to considering that higher SES leads to more educational opportunities (21.9%, n=12) decreased, and also the number of students' responses decreased in relation to high academics equalizes opportunities for low SES students (0%). Furthermore, new reponses were added in the post-test in relation to pointing out that the child's SES affects the attitudes of education personnel (3.6%, n=2), self-esteem of students explains the educational opportunities that they receive (1.8%, n=1), and SES should not influence educational opportunities (1.8%, n=1). It can be concluded, based on the comparison of students' responses in the pre-test and post-test, that they gained complexity in their academic knowledge and on specific effects of low SES on educational opportunities and treatment received in the public school system.

Regarding gender in the pre-test, 40% (n=22) of the students stated that gender biases exist but gave no further explanation, 13% (n=7) of the students indicated that there are no differences in treatment given by gender, and 11% (n=6) indicated that gender influences on education are decreasing. Regarding the effect of cognitive, cultural, and linguistic factors affecting education, 53% (n=29) of the students indicated that language and culture determines how children learn; 7. 2% (n=4) of the students indicated that language and culture may influence how ideas are communicated and their meanings interpreted by cognition; and 1.8% (n=1) of the students indicated that cognition, culture, and language define a person. In the post-test results showed that 30.9% of the students (n=17) indicated that gender biases exist with no further explanation, 3.6% of the students (n=2) indicated that gender influences on education are decreasing, and one student (1.8%) indicated that no differences in treatment should exist given by gender. New categories of responses appeared in the post-test pointing to the presence of specific interrelations between gender and SES, teachers' attitudes, and educational opportunities: 21.8% of the students (n=12) indicated that males have more opportunities, 12.7% of the students (n=7) indicated that females from low SES have fewer opportunities, 7.3% of the students (n=4) indicated that females have fewer opportunities, 5.5 % of the students (n=3) indicated that gender can affect teachers' attitudes, and one student (1.8%) indicated that gender should not influence educational opportunities.

Based on these responses, it is considered that teachers' gain in awareness levels of cultural issues is important because students' SES and gender affect school choices and learning experiences in a number of ways: in terms of tracking, as well as their options for higher education and subsequent job opportunities. Tracking is also

done by teachers in the form of referral of low SES, and language and culturally diverse students to special education or low level academic groups.

The third area of questions encompassed school reform and the effect of tracking on education. In relation to school reform, the most frequent responses in the pre-test indicated that 33.6% (n= 13) of the students considered that family and society influences children's school achievement levels, 28.2% (n=10) considered that school reform needs to be focused on educational methods, 28.2% (n=10) responded that school reform should focus on given students control for their learning and reducing bureaucracy, and 5% (n=3) considered that school reform should focus on teachers' change of attitudes. In the post-test in relation to school reform there was also an increase in the level of complexity of students' responses. In the post-test 49% of the students (n=27) considered family and society as major factors influencing school achievement levels in children, and 20% of the students (n=11) considered that the school system was the major factor. In addition, a new category that considered an interaction between society, family, and school (31%, n=17) emerged in the post-test. This pattern of responses indicates that by the end of the semester, students realized the interaction between the family, school, and sociocultural environment on the level of educational achievement of children. Students pointed to the importance of communication across social agents and environments (i. e, parents within the family , and teachers within the school), enhancing sensitivity levels of teachers about their cultural attitudes, respecting the culture and the language of minority children, etc. Thus, students became aware of the importance of the school reform movement in relation to social and emotional aspects of minority children's lifes. In sum, regarding school reform the responses can be integrated as the need for the community' s involvement, including parents, students, teachers, faculty, and administrators in order to reduce bureaucracy and increase academic excellence for all students, including the culturally and linguistically diverse. Based on these responses, it can be proposed that there is need for meaningful interaction among educators so that they can expand their knowledge and perceptions of the world. Educators as individuals can take the inititative for a school reform, but it takes a team to make a change.

Regarding tracking, in the pre-test 50.9% (n=28) of the students considered that tracking is negative because is lowers the self-esteem of children, and does not allows for individual education and change; 25.5% (n=14) of the students indicated that tracking has a positive effect for the exceptional child, and 23.6% (n=13) said that tracking has a positive effect for equality of education. In regard to tracking, at the beginning of the semester educators view mainstreaming as an equal opportunity education, although the specific needs of the students are not attended to. The responses suggest that all

educators need more awareness of the resources available to them to individualize instruction in order to accommodate variations in learners. In the post-test there was a decrease in the proportion of students who pointed out positive effect (11%, n=6). In addition, in relation to negative effects of tracking on education, the responses of students increased (70.9%, n= 39), and became more specific and focused on minority issues. Students stated that tracking has a negative effect because it limits educational experiences (27.3%, n=15), and tracking affects the socioemotional development of children (36.4%, n=20). Thus, it can be concluded that students' responses became more related to minority issues and educational inequalities due to tracking in the educational system; and also students began to perceive tracking as negative for exceptional children as well.

The fourth area of questions was related to quantitative and qualitative methods for assessment; and the implications of assessment and diagnosis on instruction. Regarding the first question, in the pre-test 27.3% (n=15) of the students showed some understanding of both qualitative and quantitative assessment, 36.4% (n=20) of the students showed some understanding of quantitative but not of qualitative assessment, 34.5% (n=19) of the students had no conceptual understanding of either one, and only one student (1.8%) showed some understanding of qualitative but not of quantitative assessment. The responses for this first question can be further described as follows: qualitative assessment was understood as amount of knowledge by 24% of the students (n=13), as test scores by 21.8% of the students (n=12), as absolute measure of ability by 7.2% of the students (n=4), and as completeness of responses by one student (1.8%) ; qualitative assessment was understood as value of knowledge by 7.2 % of the students (n=4), as correctness by 7.2% of the students (n=4), as improvement from baseline by 7.2% of the students (n=4), as ability to compare the child to the peer group by 5% of the students (n=3), and as behavioral checklists by one student (1.8%). In the post-test there was an improvement in the students' level of knowledge of both quantitative and qualitative assessment methods. The majority of students (85.5%, n=47) showed understanding of both concepts, 5.5% of the students (n=3) showed some understanding of one concept, and only 5.5% of the students (n=5) showed no understanding of either concepts. It can be concluded by comparing the pre-test and the post-test responses that students gain of knowledge was related to exposure to information in the lectures, readings, class discussions and activities in reference to qualitative and quantitative assessment methods. Presently, quantitative traditional assessment methods are been replaced by fresh approaches coming from the qualitative paradigm, which are being

developed for encompassing cultural and linguistic differences of minority children in the public school system.

The second question of this fourth area referred to the implications of assessment and diagnosis for instruction, in the pre-test 21.8% of the students (n=12) showed some understanding of testing but no understanding of diagnosis (i. e. , testing as outcome, knowledge of facts, identification of strenghts and weaknesses, and data collection), 25.5% of the students (n=14) showed some understanding of diagnosis but no understanding of testing (i.e. , diagnosis as evaluating, longitudinal assessment of all areas, labelling of a student, and hypotheses based on tests results), and 74.5% of the students (n=41) showed no understanding of either concept. In the post-test, students showed gain of knowledge as the proportion of students understanding only one concept dropped to 23.6% (n=13), and also the proportion of students who did not understand either concept dropped to 11% (n=6). In addition, a new category emerged showing that 65.4% of the students (n=36) understood conceptually both concepts.

In conclusion, teachers lack of specific and clear knowledge about the implication of assessment and diagnosis for instruction. Thus, these findings imply that teachers lack training and conceptual understanding and applied strategies for handling a learning problem case within their classrooms. Thus, a natural effect then will be to refer the child for assessment, and thus a gap between assessment, diagnosis, and instruction will be created. Teachers need to be empowered by gaining knowledge about psychopedagogical assessment and diagnosis, so that they can handle learning problem cases within their classrooms, and also they can communicate from an equal status position with school psychologists and counselors. In this manner, teachers can really act as advocates when participating in a multidisciplinary team model for assessment. Thus, given the importance of teachers' knowledge of assessment and diagnosis concepts, students gain of knowledge in relation to concepts of assessment and diagnosis was impressive. This increase in the level of awareness of how assessment and diagnosis are related to education is very important as teachers decide whether or not to initiate referrals for assessment, and also they communicate with school psychologists who report diagnosis conclusions to them. The positive use by the teacher of this psychological information derived from assessment and diagnosis procedures depends on the level of knowledge that the teacher has in order to transform the information into educational practices.

The fifth area of questions was related to effects of visual impairments, and linguistic and cultural differences on learning; intelligence and giftedness. In relation to the effect of visual impairment on learning, in the pre-test 76.3% of the students (n=42)

indicated that visual impairment has a negative effect on learning due to developmental differences in these children, high percentage of visual learning in the regular curriculum, the effect of visual impairment on reading and writing skills, separation from peers, and this condition shapes the perception of reality differently. However, 20% of the students (n=11) indicated that visual impairments can have positive effects on learning, such as the child's increase of awareness of other positive attributes, the increase of the child's abilities to focus attention, and increase on motivation for learning. In the post-test students' responses shifted from negative effects of visual impairment (45.5%, n=25) to including a higher proportion of responses in the positive effects category (29%, n=16); and to two new categories that pointed out the importance of teachers' attitudes and training for meeting the unique pedagogical needs of visually impaired children (20%, n=11), and the absence of an effect of visual impairment on learning (5.5%, n=3). Thus, it can be concluded that teachers' views of the influence of a specific physical handicapping/disabling condition changed from focusing on the child's limitations to the teachers' negative attitudes and lack of training and knowledge on best educational practices for visually impaired children as external limitations.

Regarding linguistic and cultural differences, in the pre-test students overwhelmingly supported (94.5%, n=52) that current assessment methods do not compensate for cultural or linguistic differences, as they are biased for the language minority child. In the post-test also the highest proportion of students (81.8%, n=25) pointed out that current assessment methods are flawed; however students showed gain of knowledge on the specific factors within current standardized assessment methods used with minority children that can cause methodological flaws. Student could point out that current standardized tests do not reflect cultural differences in their items and underlying theories or constructs, that the child must take the test in his/her first language in order to assure accuracy and validity in the assessment process, that the attitudes of the evaluator influence the assessment and diagnosis process given the state of the art of assessment methods, that biases against minority children existed in the norms used in standardized tests, etc.

In relation to gifted and talented minority students' characteristics, in the pre-test 78.2% (n=43) of students indicated that gifted and talented minority students' s characteristics were similar to mainstream students, 16.4% (n=9) indicated that differences between minority students in regular educational programs and majority students in gifted and talented programs exist due to language and cultural characteristics and styles of learning. In the post-test 87.3% of the students (n=48) felt that minority and majority students who are gifted and talented share the same characteristics, and one

student (1.8%) pointed out that differences existed between majority and minority gifted and talented students. A new category emerged, 10.9% of the students (n=6) stated that minority and majority gifted and talented students showed unique characteristics in compartison to normal children. In addition, these students could point to specific characteristics that gifted and talented students have, such as high-verbal and non-verbal thinking skills, self-motivation to excel. The addition of this new category shows some gain in specific knowledge by the students toward the end of the semester, as their knowledge became more complex. Students also understood that majority and minority students have similarities in their intrinsic cognitive characteristics; however, the expression of these internal forms of knowledge take different cultural and linguistic forms. In spite of these external differences that we observed in children's behaviors, the internal potentials exist in both the majority and the minority child.

The sixth area of questions referred to the students' knowledge of contemporary theories of intelligence and of first and second language learning. In relation to contemporary theories of intelligence, in the pre-test 40.7% of the students (n=17) showed no understanding of contemporary theories of intelligence, 27.3% of the students (n=15) showed some knowledge of theories focusing on intelligence as an adaptation and interaction with the environment, 23.6% (n=13) of the students showed some knowledge of theories conceptualizing intelligence as a fixed and innate ability, and 18.2% (n=10) of the students showed some knowledge of theories focusing on intelligence as a product or actual performance. In the post-test students showed an increase in their knowledge level, as 72.7% of the students (n=40) could conceptually understand contemporary and historical views of theories of intelligence. These students could point out major attributes of theories and controversial issues, such as internal versus external factors affecting intelligence development, definitions of intelligence pointing to maturational factors or nurturing within a specific sociocultural environment, potential for learning versus amount of knowledge acquired, etc. Only 21.8% of the students (n-=12) could not understand historical views of intelligence, and 5.5% of the students (n=3) showed only understanding of contemporary views of intelligence.

In relation to major contemporary theories of first and second language learning, in the pre-test 23.6% of the students (n=13) indicated that language acquisition is easier for children than for adults, 12.7% of the students (n=7) responsed that children learn the first language and then transfer knowledge to the second language, 12.7% of the students (n=7) responded that first language instruction improves learning, 7.3% of the students (n=4) indicated that the first language was taught by the caregivers and the second language was taught by educators and the community, 7.3% of the students (n=4)

responded that learning depends on the social environment, 3.6% of the students (n=2) responded that second language learning has no effect for the first language, 3.6% of the students (n=2) responded that second language must be taught by immersion, 3.6% of the students (n=2) responded that first language learning is a lifetime endevour, and that second language learning takes two years, 1.8% (n=1) of the students indicated that children are confused by two languages and they should learn only one language, 1.8% of the students (n=1) indicated that the first language is acquired by 5 years of age, and that the second language is acquired later, and 1.8% (n=1) of the students responded that an English as a second language placement with a pull-out program for the first language was needed. In addition, 20.2% of the students' responses (n=11) indicated lack of knowledge of theories of intelligence and of first and second language learning.

In the post-test regarding the question of theories of first and second language learning, there was a chnage in the pattern of students' responses, which indicates a gain of knowledge showed in the complexity of the responses. Students ' post-test responses in relation to aptitude and age factors influencing first and second language learning indicated a difference: the category "language acquisition is easier for children" dropped to only 1.8% of the students (n=1), and also the category "one needs to master a first language to master a second language" also dropped to 1.8 % of the students (n=1). Students considering that there was transference from first to second language contents also dropped to 5.5% (n=3). Students considering that "learning a second language is a lifetime endevour" increased to 11.4% (n=8). New categories needed to be created for the post-test, which indicated a gain of more specific knowledge in relation to theories of first and second language learning. Students referred to Piagetian and Chomskyan theories of language learning (14%, n=8), 16% of the students (n=9) referred to specific instructional methods and educational programs (i. e. , immersion, English as a second language, dual bilingual programs), 18% of the students (n=10) responded that "all children should have a second language", 17% of the students (n=9) responded that "the second language enhanced the development of the first language", and 12% of the students (n=6) responded that "bilingual children achieve at higher cognitive levels" and mentioned that "they have metalinguistic awareness".

In conclusion, regarding the sixth area of questions, teachers had inaccurate knowledge or were able to give only very broad and unclear statements about contemporary theories of intelligence and first and second language learning. In light of the responses, it can be can concluded that teachers need to gain knowledge about basic theoretical issues of intelligence and language development in order to understand assessment and instructional issues in relation to variations in learners. Especially for the

case of exceptional, and culturally and linguistically diverse students. This gain of academic knowledge needs to be preceded by a gain of awareness of their own biases in terms of sociocultural values, attitudes, beliefs, and educational philosophies. In order to achieve a school reform movement toward multicultural education, we need to change teacher education programs by focusing on attitudinal changes that will make possible a gain of academic knowledge and its application on teachers' daily educational practices. Thus, school reform can begin at the level of educating pre-and-in-service teachers, if a change of teachers' attitudes in educational programs at the higher institutions levels and at the school system level is stimulated

In general, across all areas of questions two patterns of change emerged when prior and exit levels of academic knowledge were compared. The first pattern was followed by students who began with multiple disconnected concepts and at the end of the semester students showed connected concepts in a coherent network. The second pattern was followed by sudents who began with simplistic views of major concepts, with dualistic perspectives of multidimensional concepts. At the end of the semester these students showed growth based on knowledge acquisition and the formation of connected networks of concepts.

Pre and post-test attitudes survey. This attitudes survey encompassed six questions, which increased in their level of specificity about the purposes and obstacles of education. The first question asked about the purpose of education. At the end of the semester, students began to view the child as a "whole" person, and shifted from stimulating academic skills as the educational purpose (from 29.2%, n=16 in the pre-test to 12.8%, n=7 in the post-test), to stimulating socialization skills and education to be a forum for creating contributing members of society (from 16.4%, n=9 in the pre-test to 50.9%, n=28 in the post-test). The second question focused on perceptions of the most important task that teachers accomplish in education. Students' responses moved from stimulating socioemotional areas (from 23.6%, n=13 in the pre-test to 7.2%, n=4 in the post-test) to be more sensitive to the individual educational needs of children (from 9%, n=5 in the pre-test to 20.2%, n=11 in the post-test). Thus, it can be inferred from the responses that after attending a class on multicultural education, teachers changed their perceptions of their roles in order to include individual differences in children's needs. The third question focused on the most important task for teachers. Students sensitivity to individual children' s needs is the major area of change after taking a class in multicultural education (from 5.5%, n=3 in the pre-test to 21.8%, n=12 in the post-test). Other categories also changed from the pre-test to the post-test, in relation to the most

important task for teachers: academics/thinking/learning (from 23.6%, n=13 to 47.3%, n=26 in the post-test), stimulating student' s self-concept (from 20%, n=11 in the pre-test to 27.3%, n=15 in the post-test), and socialization (from 12.7%, n=7 in the pre-test to 3.6%, n=2 in the post-test). Taking into account the emergence of the importance of the unique needs of every child and to acknowledge differences among children and the decrease of emphasis on academic skills and socioemotional development, it can be concluded that teachers' s attitudes changed toward a more nurturing and sensitive role as the semester was finishing.

The fourth question related to obstacles for teaching. Students did not change much from the pre-test (59%, n=32) to the post-test (69%, n=38) in relation to the external limits that included the school system over which teachers have little control (i. e. , lack of time and resources, state or local curricular guidelines, inappropriate leadership, large class sizes, too many responsibilities). In relation to barriers within children (i. e. , discipline, learning problems, personal, social, and cultural diversity, students' apathy and poor attitude toward learning), students did not change much from the pre-test (26%, n=14)to the post-test (23%, n=12) either. However, a new category of responses emerged in the post test (14%, n=8), in relation to professional apathy and teachers' lack of knowledge and training on children with diverse and different needs. This is an interesting new category which points to the beginning of including teachers' attitudes and knowledge levels as educational constraints. This is probably the beginning of teachers assuming the responsibility over school reform and improving the quality of education that children with diverse and different needs receive presently. When students were asked about the influence that teachers can have over difficult-to-teach children in the fifth question, teachers decrease their responses in relation to external contraints for achieving success with difficult-to-teach children (from 70.9%, n=39 in the pre-test to 54.5%, n=30 in the post-test). Teachers' responses shifted to a need for change in students' and teachers' attitudes. In addition, teachers also included new responses, such as the presence of learning potential in all students, and the need to individualize instruction.

It can be concluded that the results of this attitudes survey suggest a change in teachers' attitudes toward the possibility of success in educating all children, including the difficult-to-teach children category, which includes special education and culturally and linguistically diverse children. Moreover, teachers assumed direct responsibility as a professional group for educating children who are exposed to at-risk external environments (i. e . , low SES, violence and drugs present in the social environment, etc.), and pointed to their attitudes as a major factor under their control that

can be changed. Thus, giving teachers the possibility to become aware and sensitive to the uniqueness of the educational needs of majority and minority children should be the major priority of educational institutions when developing reflective and multicultural curriculums. Presently, there is a need for a redefinition of teacher education programs, which should focus on stimulating teachers to gain awareness of their attitudes, sociocultural values, and educational philosophies; in light of academic knowledge and by examining their own personal and professional sociocultural experiences. If teachers are given the opportunity to reflect, they can become aware of their powerful role as models in the education of children. At the end of the semester, teachers pointed to the need to become advocates in order to take the initiative in exploring the external causes of the children's problems. Teachers became empowered, and they believed that they could make a difference. Teachers also realized that in order for this change to occur teachers needed to discover and be sensitive to the many variations among the student population, and to be aware of the influence of their own sociocultural attitudes and beliefs over the academic and socioemotional development of children.

Educational philosophies paper. Regarding the cognitive-ethical stages achieved by the students, the categorization results using the Perry's scheme (1970) were: 16% (n=7) of the students were in the first stage of dualism, with 1.8% (n=1) of the papers in position 1, and 12% (n=3) of the papers in position 2; 5.5 % of the students (n=3) were in the second stage of multiplicity, all papers were in position 3; 54.5% of the students (n=30) were in the third stage of relativism, with 23% of the papers (n=13) in position 5, and 20% of the papers (n=11) in position 6; and 27% of the students (n=15) were in the fourth position of commitment and empathy, with 7% of the papers (n=4) in position 7, 12% of the papers (n=6) were in position 8, and 7% of the papers (n=4) were in position 9. The reliability coefficient between the group of five volunteer students who served as judges, and the author of this paper and instructor for this class was $r = .85$, assuring a good confidence level in the results.

The most common stage of cognitive-ethical development achieved by these teachers in their philosophical papers was the third stage of relativism (54.5%), position 6 (20%), leading toward stage four of commitment and empathy, (27%). These results are higher than the range of cognitive-ethical developmental levels in Perry's scale (1970) reported by Bradley-Stonewater, et al. (1986). This was a study conducted with a typical college population, as the sample included 24% of graduate students, mainly in education and philosophy, and 76% of undergraduates in a wide range of majors. Bradley-Stonewater et al. (1986) selected this sample in order to include those who could probably

score at positions 2 through 5 on the Perry Scheme, which is the range typically found in a college population.

A relation was found between expression of both philosophy and concrete educational practices which lead toward higher levels of cognitive-ethical development according to Perry's scheme. That is, the more experience a teacher had, the higher levels of cognitive and ethical development that this person achieved. A possible explanation can be that individuals with more teaching experience seemed to be more creative, holistic, and eclectic in their teaching approaches. In addition, due to their experience these individuals could go from theory to practice in a coherent manner. That is, they could express verbally their philosophies, as they were conscious of their educational values and beliefs; and at the same time, they would give concrete examples of their teaching practices as illustrations. These expert teachers could show a balance between ideals and reality, objectivity and subjectivity, leading to suggest that teaching is not a technique but a complex art. Millies (1990) pointed also to the relation between gain in awareness in educational belief systems and teaching experience. Millies (1990) found that experienced teachers used their values to determine their beliefs, which were translated into guiding principles, which in turn resulted in the selection of strategies. In contrast, the novice teachers were in the process of articulating their values and their pedagogical principles (i. e. , images, experiences, routines, and strategies found in the mental life of teachers) were just emerging. Novice teachers have values about appppropriate student behaviors and learning, but they can not express them verbally yet. That is, novice teachers have not yet developed metalinguistic awareness or the abstract logic ability to access the underlying principles and values of their overt behaviors and strategies. Then, for novice teachers making implicit knowledge explicit is still a difficult endevour due to lack of real-life teaching situations in which their knowledge is expressed and clarified. If non-verbal expression of knowledge has not taken place yet, then the higher stage of expressing verbally this knowledge can not be accessed yet. In addition of this difficulty, this gain of accessibility of implicit knowledge needs to be stimulated through teacher educational programs that provide a forum for integrating real-life experiences, conceptual knowledge, and reflective critical thinking on teachers' attitudes and belief systems.

In relation to this need for integration, another pattern found was that teachers could not see a clear connection between teaching practices, research, and teacher education in current teacher training programs. As Millies (1990) suggested, experience by itself does not assure a gain in accessibility to self-reflection. Millies pointed to the need to help teachers achieve a higher level of accessibility to their own belief system

through an understanding and recognition of the personal and professional cognitive-ethical development of the individual teacher. As mentioned by the students in the class discussions of this multicultural education course, teachers need a support group within their training programs in which they can hear the voice of other teachers, and have a space for reflecting upon the overwhelming problems that they are facing now when serving diverse children with lack of conceptual knowledge and reflective thinking skills.

Millies (1990) pointed out:

> A subject's pedagogical self is the determinant of the pedagogical assumptions which guide his or her practice. These assumptions take the form of values -what the individual perceives to be of worth, merit or importance-; beliefs -mental convictions of the truth of something-; principles -accepted or professed rules of conduct-; and strategies -techniques employed by the subject- . (p. 121)

Results of this survey also showed that teachers need the opportunity to transform their educational philosophies and expectations into real life experiences in the classroom. A pattern found in the data was that the more the teachers expressed philosophical and pedagogical values on the diversity of learners and could illustrate these values using concrete teaching activities, the higher the teacher scored on Perry' s scheme. Furthermore, the more experienced teachers seemed to have a more eclectic and flexible view of children' s learning processes than novice teachers. Expert teachers considered the stimulation of the children' s potentials in cognitive as well as socioemotional development their priority. These expert teachers described their role as guides and models for assuming self-respnsibility, commitment, and love for learning. In conclusion, as "student-researchers" categorized the philosophy papers, patterns or profiles about the characteristics of the teachers at each stage began to emerged very clearly. When these "student-researchers let the data speak to them", they were amazed of the commonalities found across papers and across judges. These results, were in opposition to their perceptions of the papers at the beginning of their task, as these papers seemed to be a very disconnected set of subjective individualities.

The first stage of dualism included teachers who viewed their roles as imparters of knowledge, while students just sit quietly on task, completing all work on time. Typically these were novice teachers who could not illustrate their unflexible teaching principles with concrete examples of their pedagogical practices as a result of their unclear or hard to express philosophies and beliefs. The second stage of multiplicity was exemplified by

teachers who had began to recognize different points of view due to their acquired teaching experience (an average of 2 years); however, they were still loking for the right answers in an external source. These teachers had gain consciousness of their educational philosophies, as they could express their values and beliefs verbally in their papers. These teachers reflected deeper thought and time clarifying personal philosophies, which resulted in a high respect for the individualism of their students. The third stage of cognitive-ethical development, relativism, reflected teachers who saw their role as a guide for placing all knowledge in context, and also as challengers for gaining more knowledge. They tried to act as children' s supporters in order to help them clarify their commitments and live up to their values. These teachers could give concrete examples of pedagogical activities based on their values and beliefs. Teachers in the stage of relativism see the students' role as evaluating perspectives, making judgements in context on the basis of evidence, clarifying commitments, choosing and then living up to a choice of values outlined in curriculums. The classroom environment that the third stage teacher creates is open, learning is overt, and the learning-teaching situation is evaluative.

The fourth stage, commitment and empathy, demostrated teachers who were aware of their impact on their students, they were sensible about honoring individual differences, and they assumed great responsibility for improving society in general. Fourth stage teachers become advocates and consultants, helping students set up self-directed projects and independent learning exercises. All learning is derived from the self-imposed exercise of creative development on real projects for real audiences; in which students discuss, network, plan, execute and then evaluate the finished products. These teachers valued a student-centered learning environment, in which the teacher educated "the whole child" through his or her own enthusiasm for learning, giving more emphasis to the socioemotional development of children rather than stimulating solely the academic domain. These teachers favored eclectic teaching strategies that were flexible upon the child' s needs, letting the child be responsible for his or her learning process, but at the same time helping children through an open and honest communication. The classroom environment is open and flexible, which is created by the students interactions in this sociocultural context of learning. These were experienced master teachers, who could express verbally their educational values and beliefs very clearly.

Another trend observed in these papers was the influence of the sociohistorical contexts in which teachers live presently on the content of their philosophies. I argue that if the students' pedagogical papers had been written in the past, they would probably have been lower on Perry' s scale. I suggest that in the past, the school curriculum was reflecting more social economic trends, rather than focusing on the individual potentials

of students. Thus, in the past students were conformed, not guided through education. The civil right movements of the 60's and 70's has helped to raise consciousness about all areas of educational equality, such as special education, multicultural and bilingual education, giftedness, gender and socioeconomic issues, socioemotional development and educating "the whole child", etc. Presently, multicultural education as a school reform movement seems to be emphasizing the role of the educators as facilitators for the stimulation of the potential of the individual. Teachers are becoming aware of their responsibilities and the great impact of their roles as social agents and models, and teachers are accepting the challenge and making the commitment of meeting children's diverse needs. However, as shown in this study, teacher training programs need to change also in order to meet the diverse needs that teachers have at present. Teacher training programs need to focus on raising awareness of attitudinal belief systems and educational philosophies, and only then, an open minded teacher will emerge, who has been exposed to new conceptual knowledge that underlies and forms the basis for applied educational methods and strategies that meet the needs of diverse children.

In addition, to the Perry' s scheme, a second categorization system was developed by the author and the 5 volunteer "student-researchers" in order to include a content analysis. This second categorization was developed using inductive analysis for the identification of themes in the subjects' responses. The underlying rationale for this second content categorization was based on the assumption that diferent levels of cognitive-ethical development would be found within and across individuals across themes. Lawrence (1992) pointed to the dynamic nature of beliefs, and cognitive-ethical developmental stages, which are portrayed differently across contents and contexts. Two broad areas were identified in the content of the papers: (a) operations or the actual teaching training and procedures, including three subareas: classroom management, methods and strategies, and teacher education; and (b) the educational philosophy and beliefs of teachers, including three subareas: children' s socioemotional development, children' s learning processes, and diversity in learners. Across these two broad content categories, the students' papers were assigned to a cognitive-developmental stage using Perry' s scheme (1970). The classroom management subcategory included the characteristics of the learning environment created by the teacher, such as an open or closed environment, a democratic versus an authoritarian management style, a teacher' s attitude of acceptance versus judgement, and acceptance of low versus high mobility of the children in the classroom. The teacher strategy subcategory included a teacher versus a student centered emphasis, a cooperative group versus a lecture style, and a close versus an open discussion. The subcategory of teacher education included the need for

improvement through formal training. The children' s socioemotional development subcategory included self-respect, self-actualization. self-confidence, motivation, and respect for others. The learning processes subcategory included self-direction, risk taking, creativity, curiosity, and imagination. The diversity in learners subcategory included idiosyncracies such as SES, cultural factors, gender, and learning styles. That is, within a paper there was a tendency to cluster within a specific stage on Perry' s scheme. However, the performance of an individual teacher tended to vary across different topics.

The categorization results based on content differed from the overall categorization of the papers, eventhough in both cases the Perry' s scheme was used. Regarding the classroom management subcategory, 36.4% of the students (n=20) were in the first stage of dualism, 21.7% of the students (n=12) were in the second stage of multiplicity, 36.4% of the students (n=20) were in the third stage of relativism, and 5.5% of the students (n=3) were in the fourth stage of commitment and empathy. In relation to the methods and strategies subcategory, 7.7% of the students (n=4) were in the first stage of dualism, 12.7% of the students (n=7) were in the second stage of multiplicity, 30.8% of the students (n=17) were in the third stage of relativism, and 49% of the students (n=27) were in the fourth stage of commitment and empathy. Results for the third subcategory of teacher education included, 16.7% of the students (n=9) for the first stage of dualism, 5.5% of the students (n=3) for the second stage of multiplicity, 50% of the students (n=28) for the third stage of relativism, and 27.8% of the students (n=15) for the fourth stage of commitment and empathy. In relation to the children'bs socioemotional development subcategory, 5.5% of the students (n=3) were in the first stage of dualism, 25.5% of the students (n=14) were in the second stage of multiplicity, 30.9% of the students (n=17) were in the third stage of relativism, and 38.1% of the students (n=21) were in the fourth stage of commitment and empathy. Regarding the children' s learning processes subcategory, 3.6% of the students (n=2) were in the first stage of dualism, 14.5% of the students (n=8) were in the second stage of multiplicity, 47.2% of the students (n=26) were in the third stage of relativism, and 34.5% of the students (n=19) were in the fourth stage of commitment and empathy. In relation to the diversity in learners subcategory, 5.5% of the students (n=3) were in the first stage of dualism, 21.8% of the students (n=12) were in the second stage of multiplicity, 32.7% of the students (n=18) were in the third stage of relativism, and 40% of the students (n=22) were in the fourth stage of commitment and empathy.

It can be concluded that these results suggest a variation in the cognitive-ethical developmental stage achieved related to content knowledge. Thus, it can be inferred that

cognitive-ethical development is an idiosyncratic process, in which content knowledge develops at different paces. The two lowest content category classifications were related to classroom management, with the majority of teachers assuming a dualistic or relativistic position. This subcategory was followed by teacher education, in which the majority of teachers followed a relativistic position. In all the other four subcategories (i. e. , methods and strategies, children' s socioemotional development and learning processes, and diversity in learners), teachers followed a position of commitment and empathy. However, the majority of teachers had more knowledge of methods and strategies at the fourth stage. Teachers' knowledge of children' s socioemotional development and learning processes, as well as their knowledge level of diversity of learners varied widely from stage two to stage four. These results suggest that current teacher training programs are emphasizing more content and curriculum oriented knowledge (i. e. , methods and strategies); rather than underlying conceptual knowledge on child development and learning processes in diverse children, and stimulating reflection on their belief systems.

There was also some evidence that the experience of reading about and hearing to classmates' educational attitudes and philosophies acted as a tool for gaining awareness of their own attitudes and beliefs. Volunteer "student-researchers" acting as judges reported that their level of awareness of their own subjectivities increased. As a group they could find commonalities across their own subjectivities as judges and also across the individual papers that they were categorizing. That, by negotiating their subjectivities, they increased their objectivity in setting up standards for the group and defining by consensus the profiles of the cognitive-developmental stages found in the content of the papers. These volunteer "student-researchers" acting as judges concluded that probably the papers were not an accurate representation of the students' cognitive and ethical development due to just being a sample of their behavior. Their argument was that just because the evidence of a higher stage was not present in the students' papers, it did not mean that these teachers could not think and teach based on higher philosophical levels. However, at the same time, these "student-researchers" observed in their results that the ability to be reflective and to express values and beliefs verbally is a developmental process. Thus, their final argument was that if there was much information in the mind of these individuals, which they were not able to express in a written language form, then these individuals must have really been at lower cognitive and ethical developmental stages. The supposition here is that the higher the cognitive-ethical developmental stage achieved, the more access the person will gain on the verbal expression of their values and beliefs. This conscious access to non-verbal cognitive processes gained through

verbal mental representations and expressions, is called metalinguistic awareness. This final argument is supported by evidence in the literature on metalinguistic awareness as one of the cognitive processes stimulated by learning two languages (e. g. , see Ben-Zeev, 1977; Cummins, 1978a, 19 b, 1980; Feldman & Shen, 1971; Lambert & Tucker, 1972; Landry, 1974; Peal & Lambert, 1962; Torrance, Gowan, & Aliohi, 1970). This is considered an advantage of bilingualism as an increase of consciousness of the arbitrariness of labels used to denote objects, and the underlying different sociocultural connotations occurs due to the influence of learning two languages.

Reaction papers. A total of 39 reaction papers were picked at random, which were analyzed qualitatively using Perry' s scheme of cognitive-ethical developmental stages by 6 volunteer "student-researchers". The majority of the papers (70%, n=27) were categorized in stage four, of commitment and empathy. The other three stages had a fewer number of papers in them: 5% (n=2) of papers were categorized in stage 1 of dualism, 10% (n=4) in stage 2 of multiplicity, and 15% (n=6) in stage 3 of relativism.

Profiles of each stage emerging as patterns were observed throughout the reaction papers. The higher cognitive-ethical developmental stage, commitment and empathy, was portrayed in these reaction papers as an increase in sensitivity and accepting responsibilities regarding contemporary sociocultural issues of concern (i. e. , racism, drug prevention, and environmental problems). These individuals were responsible citizens preoccuppied for the well being of society in general. They pleated for improving teacher educational programs and teacher activism in educational reform. They reflected on American values in regard to individualism, freedom of choice, and humanity; and its effect on the national community in general. People in this higher stage of development could use their own personal and professional experience as criteria for the evaluation of the issues discussed and the defense of their positions. Thus, they could make the connection between their own values and beliefs and the application of them on educational and national issues. In general, their arguments were passionate and compelling, showing their commitment to live up to their values.

Students in the third stage of development, relativism, were able to put knowledge in context on the basis of supporting evidence supplied by their experiential sources, but they were not ready yet to venture with their own arguments in their discussions. These students used the authors of the articles as points of reference for their discussions, and as models and guidelines for their positions. It seems that these students decided to take a "safe" position following suggestions of authorities. Although these students consider

multiple points of view using as models different authors, they could not consider implications or consequences of the authors' positions very strongly, neither could they weight alternatives fully. However, these students in the third stage were already experimenting with a deeper sense of the debate between opposing positions, as they recognized underlying power relations between groups and the need for commitment in order to live up to their values. Eventhough, they could recognize the need for commitment, they were not ready yet to accept all the responsibilities that come with this challenge. Thus, students in the third stage offered some support for a tentative and specific solution to the issues discussed, but they did not seem to grasp its ethical and social implications. Students in the second stage of cognitive-ethical development, multiplicity, could evaluate the advantages and disadvantages of being in favor or being opposed to either side of the issue discussed. They could understand that there is not a unique, clear cut "right answer" to defend or oppose a position; however they were not ready to take a stand of their own yet. That is, it is like they are still evaluating the issue and did not want to confront opposing positions yet. They did not offer a clear thesis position, neither a clear focus for their discussion.

The content of these reaction papers was related to two topics assigned by the course instructor: the English-only movement, and the school reform objectives proposed in America 2000. Common themes presented in both topics were: (a) a general concern for adequate teacher preparation to meet the needs of present and future school population, and (b) a concern for societal problems which affect education indirectly and directly. There were also some differences in terms of the themes covered by the two topics: (a) papers dealing with the America 2000 did not mention bilingual/multicultural education, (b) the issue of funding was mentioned in the America 2000 only, (c) the America 2000 papers discussed the ramifications of the proposal for educators in general, while the English-only movement papers concentrated on bilingual education issues, and (d) the America 2000 papers did not discuss the implications of this proposal for minority groups.

"Student-researchers" reported that they could benefit from the exercise of categorizing the reaction papers in cognitive-ethical developmental stages, because they could reflect on their own attitudes toward grading and assessment. Furthermore, these students also reported that they gained awareness of their own attitudinal biases, beliefs, and values regarding multicultural education. These volunteer "student-researchers" also reported that the task was challenging, valuable and meaningful.

Analysis of Other Class Activities Used

Students taking the multicultural graduate level class were asked to read a book about the influence of sociocultural factors on education, entitled "Pre-school education in three cultures: China, Japan, and the United states" by Tobin, Wu, and Davidson (1989). They were also asked to write a combination of an issue and a position paper based on this book; which pointed to a review of the literature on the book' s topic and a discussion of their own perspectives, thoughts, ideas, attitudes, and experiences on the influence of sociocultural factors on education. Students found writing this paper a very difficult task, that required reflection and discovery of their own perspectives in light of the etnographic study portrayed by Tobin et al. (1989). Students reported that reading the book and writing this paper was "an eye opening" experience. They gained insight into the importance of the sociocultural context and its influence on the teachers' role as social agents. Students mentioned the impact of sociocultural values on the children' s socialization process, and its influence on teachers' attitudes and belief systems. The importance of families' values for children' s education, and the influence of sociocultural factors on parents' attitudes and beliefs toward education, were also mentioned in the students' papers. Students reported that they gained insight into the multidimentionality of multicultural education that can encompass at the same time equality for education and meeting the individual needs of every child, the minority as well as the majority child. Teachers recognized that they can make a difference on the education of culturally and linguistically diverse students. Teachers realized that if they make a commitment and assume personal responsibility through the change of their own attitudes and beliefs, a school reform as a multicultural education movement can begin.

In relation to gaining awareness of content domains covered in this multicultural education class (i. e. , influence of the sociocultural environment on teachers' attitudes, beliefs and educational practices) the Tobin et al. (1989) book made students aware that the same educational terminology had different conceptual connotations across cultures. For instance, Japanese teachers' conceptualizations of independence was a social negotiation of mutual respect; in contrast American teachers conceptualize independence as freedom of action and self-reliance for decision making. Thus, Chinese and Japanese societies favored groupism over individualism. However, students considered that groupism and individualism values were not contradictory, but complimentary. Students pointed to the extreme amount of individuality in the American family values at present, which opposes the family and the community well being (i. e. , school , church, and neighborhood). Students realized the influence of sociocultural values on their academic

training, and how powerful were them if they were not stimulated to think on their own using reflective teaching strategies. Students also recognized that applied teaching strategies were based on cultural expectations and personal beliefs in specific domains, such as discipline. Moreover, students realized that different cultures value differently specific cognitive processes used for learning. For instance, the Chinese society values the stimulation of memory as a successful learning strategy; in contrast the American society values creativity and discovery as the highest stage of academic achievement. As students considered that family support was a central factor for assuring academic success, as academic and socio-emotional development are closely related, then students felt that the present school crisis was related to the crisis of family values. Thus, as a result a factor increasing the school crisis was the social distance created between the school and the family culture.

Another factor that students considered to be increasing the school crisis presently was the contradiction between traditional American mainstream cultural values (e. g. , liberty, potentials that need to be nurtured and stimulated, pursue of hapiness, freedom of expression for beliefs, religions, and values, etc.) and the current educational system that leads to educational inequalities. Students also recognized that equality of education did not mean to treat everybody alike, but to celebrate differences and uniquenesses in learners resulting from intrinsic as well as extrinsic factors. Moreover, students were able to realize similarities or universals between learners, as well as differences within specific domains of development within the same child influenced by cultural and linguistic factors.

Another factor emerging from students' reflections was the recognition of the importance of socio-emotional development and settting high expectations for improving achievement levels and increasing potentials. Students also recognized the importance of stimulating higher thinking skills, "teaching how to think" or metacognitive processes. Students recognized the need for a school reform movement that focuses on teachers' awareness of their own attitudinal biases and its implications for assessment, tracking, and pedagogy. Students also mentioned the need to professionalize the education of teachers, and the need to begin the school reform movement by changing current teacher training programs. Teachers claimed for having a space in professional training for support groups of colleagues in which their voices would be heard.

Another classroom activity was to draw a graphic representation of the relationship between race, ethnicity, and culture. This activity was very useful for illustrating assessment limitations as the relationship between these three concepts is a complex and multidimensional one. When students tried to visually represent this

relationship, they felt frustrated by the two dimensional space provided by a pencil and paper activity. Some students produced Venn diagrams, pie charts, diverse geometric figures, lines, use colors or shadow areas to depict complexity. Other students could not produce any graphic representation, telling that what they saw inside their minds could not be expressed in a two-dimensional space. When students were asked to explain their drawings, they felt frustrated another time, because they could not verbalize their tacit knowledge. Non-verbal representations were accessed more easily than verbal explanations, due to lack of metalinguistic awareness. As the semester progressed, students could draw and explain verbally more complex relationships between these three concepts. The class realized by the end of the semester that there was an interdependent relationship between these three concepts, and that there were different versions of their interrelations due to different personal and professional sociocultural experiences.

Conclusions

Teachers reported to benefit from reflecting upon their own attitudes and educational philosophies, as they could become more sensitive and aware of their influence on assuring educational success for diverse and different children. This self-reflection was stimulated throughout the semester in this multicultural education class, as students listened to the reports of the survey results, wrote about their educational philosophies and reacted to controversial issues in the education of diverse learners (i. e. , the English Only Movement, and the America 2000 educational reform movement). Teachers' responses became more complex as they could perceive the importance of teachers' attitudes on educational success. It seems that reflective teaching is an effective technique for stimulating change in teachers' attitudes and belief systems regarding multicultural education, which has to be complemented by giving them academic information about the underlying conceptual issues (e. g. , intelligence and first and second language theories and its assessment and instructional implications for language minority children).

The background personal education information that "student-researchers" collected in a survey from their classmates, and their analysis and presentation to the class gave teachers the possibility of illustrating academic content covered in the course through a direct experience activity. From information on this survey, students concluded that unequality of education existed for minority groups, in the form of prejudices and discrimination associated with their ethnicity, race, gender; and SES, level of education, and occupation of their parents. Students realized that the complexity of the interaction of these factors will affect the quality of education and the years of schooling offered to a child in the public school system; which in turn will increase or decrease the probabilities of being in a higher or lower SES in adult life given by their career choice opportunities. Thus, the complex interaction among these multidimensional factors was illustrated through this survey class activity.

In relation to the prior and exit levels of academic knowledge, across all areas of questions two patterns of changes emerged. The first pattern was followed by students who began with multiple disconnected concepts and at the end of the semester they could form a coherent conceptual network. The second pattern was followed by sudents who began with simplistic views of major concepts, with dualistic perspectives of multidimensional concepts. At the end of the semester these students showed growth based on knowledge acquisition and the formation of connected networks of concepts.

Teachers reported that the most difficult but also beneficial class activity was to gain consciousness about their attitudes and educational philosophical beliefs through a written essay, and also listening to their classmates' s reports about the survey results. In fact, the students that could benefit the most from the survey study, were of course the ones who volunteer as "researchers". These volunteer "student researchers" could see the instructional value of the experience by itself, as they could explore "the internal worlds" of their colleagues and classmates and raise questions regarding the interrelationship of attitudinal beliefs, academic knowledge, and background personal experiences. In addition, the exercise of writing about their educational philosophies and reactions to sociocultural issues was reported by teachers to be challenging, valuable, and meaningful.

Results suggest that gain in academic knowledge occurs as the result of an increase in awareness levels of attitudinal belief systems gained through self-reflection, and also from observing others to reflect, on educational philosophies. In sum, teachers benefitted from the release of group data in class presentations, from participating as subjects and "researchers", and from sharing their educational philosophies as a support group. In conclusion, reflective teaching can be used as an effective ethnographic research tool, as well as an effective psychopedagogical strategy for multicultural education; which has to be complemented by giving teachers academic information about the underlying conceptual issues.

The voice of pre-and-in -service teachers from this multicultural education class studied claims for teacher educational programs that focus on reflective and conceptual teaching models. No longer educational professionals can succeed with just applied knowledge, they need to become reflective thinkers and researchers in their doble role of graduate students and in-service teachers. At the end of the semester, teachers pointed to the need to become advocates in order to take initiative in exploring the external causes of the children's problems. Teachers became empowered, and they believed that they could make a difference. Teachers also realized that in order for this change to occur teachers needed to discover and be sensitive to the many variations among the student population, and to be aware of the influence of their own sociocultural attitudes and beliefs over the academic and socioemotional development of children. Teachers are becoming aware of their responsibilities and the great impact of their roles as social agents and models, and teachers are accepting the challenge and making the commitment of meeting children's diverse needs. However, as shown in this study, teacher training programs need to change also in order to meet the diverse needs that teachers have at present.

Giving teachers the possibility to become aware and sensitive to the uniqueness of the educational needs of majority and minority children should be the major priority of educational institutions when developing reflective and multicultural teacher educational programs. There is a need for a redefinition of teacher education programs, which should give teachers the opportunity to gain awareness of their attitudes, sociocultural values, and educational philosophies; in light of academic knowledge and by examining their own personal and professional sociocultural experiences. If teachers are given the opportunity to reflect, they can become aware of their powerful role as models in the education of children. A reflective teacher is an open minded teacher, who has been exposed to new conceptual knowledge underlying applied educational methods and strategies that meet the needs of diverse children.

References

Banks, J. A. , & McGee Banks, C. A. (1989). Multicultural education: Issues and perspectives. Boston, Allyn & Bacon, A Division of Simon & Schuster.

Ben-Zeev, S. (1977). The influence of bilingualism on cognitive strategy and cognitive development. Child Development, 48, 1009-1018.

Bennett, C. , Niggle, T. , & Stage, F. (1990). Preservice multicultural teacher education: Predictors of students readiness. Teaching & Teacher Education, 3, 243-254.

Bradley Stonewater, B. , Stonewater J. K. , & Hadley T. D. (1986). Intellectual development using the Perry scheme: An exploratory comparison of two assessment instruments. Journal of College Student Personnel, November, 542-547.

Cummins, J. (1978a). Metalinguistic development of children in bilingual education programs: Data from Irish & Canadian Ukranian-English programs. In M. Paradis (Ed), The Fourth Lacus Forum, (pp. 56-96). Columbia, S.C.: Hornbeam Press.

Cummins, J. (1978b). Bilingualism and the development of metalinguistic awareness. Journal of Cross-Cultural Psychology, IX, 2, 131-149.

Cummins, J. (1980). Psychological assessment of immigrant children: Logic or intuition? Journal of Multilingual and Multicultural Development, 1, 97-111.

Erwin, T. D. (1983). The scale of intellectual development: Measuring Perry's Scheme. Journal of College Student Personnel, January, 6-12.

Feldman, C. , & Shen, M. (1971). Some language-related cognitive advantages of bilingual five-year olds. Journal of Genetic Psychology, 118, 235-244.

Kagan, D. M. (1992). Implications of research on teacher belief. Educational Psychologists, 27, 1, 65-90.

Karmiloff-Smith, A. (1986). From meta-processes to conscious access: Evidence from children's metalinguistic and repair data. Cognition, 23, 95-147.

Lambert, W. E. , & Tucker, S. (1972). The effects of bilingualism on the individual: Cognitive and socio-cultural consequences. In P. Hornby (Ed.). Bilingualism: Psychological, social and educational implications, (pp. 154-187). New York: Academic Press.

Landry, R. G. (1974). A comparison of 2nd-language learners and monolinguals on divergent thinking tasks at the elementary school level. Modern Language Journal, 58, 10-15.

Lawrence, C. L. (1992). Preservice teachers' development of pedagogical understandings and epistemological frameworks. Paper presented at the Annual Meeting of the Educational Research Association (AERA), San Francisco.

Mercado, C. I. , & Oest, D. (1992). Through the eyes of the teacher and the student: Reflective practice and reciprocal teaching in a bilingual graduate reading course. Unpublished manuscript.

Millies, P. S. (1990). Aspects of mental lives of teachers. Kappa Delta Pi Record, Summer, 121-127.

Peal, E. , & Lambert, A. (1962). Representational processes in early language acquisition. Boston, MA.: Rowley.

Perry, W. G. (1970). Forms of intellectual and ethical development in the college years. New York: Holt, Rinehart, & Winston.

Piaget, J. (1965). Mental imagery in the child, a study of the development of imaginal representation. New York: Oxford University Press.

Tobin, J. J. , Wu, D. Y. H. , & Davidson, D. H. (1989). Preschool in three cultures: Japan, China, and The United States. Yale University Press.

Torrance, E. P. ; Gowan, J. W. ; & Aliohi, N. C. (1970). Creative functioning of monolingual and bilingual children in Singapure. Journal of Educational Psychology, 61, 72-75

Vygotsky, S. L. (1978). Mind in society. Cambridge, MA: Cambridge University Press.

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